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TREATMENT OF SPASMODIC PARAPLEGIAS BY A NEW-TECHNICAL APPLICATION OF METHODICAL EXERCISES

BY

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THE TREATMENT OF LOCOMOTIVE ATAXIA BY METHODICAL. EXERCISES (1)

It was in 1890 that Frenkel, of Heiden, announced at the congress of German physicians of Bremen the first cases of improvement obtained in the treatment of ataxy of the upper limbs by means of exercises, graduated and suitably regulated. During the following years (1890 to 1896) the same author obtained analogous results in ataxia of the lower limbs. In Germany at the clinic of Professor Leyden of Berlin, in France at La Salpêtrière in the clinic of Professor Raymond, this practice was carried out with success on the method indicated by Frenkel, and has since been tried a little in most places. These methods are very simple and easily understood: they are based on the facts that writing, walking, grasping, swimming, &c., are exercises acquired by learning, and afterwards by an effort of attention and memory, the subject, who has lost co-ordination of the upper or lower limbs, can re-learn writing, walking, grasping, swimming, &c., if his muscular and nervous systems are not too seriously damaged. Of course, in most cases the patient will not accomplish these acts with the same precision as the normal man, still, in the end he will accomplish them, and this is a great advance.

I gave at the Salpêtrière, in 1896, a first series of statistics

(1) Published by « The Bristol Medico-Chirurgical Journal », september 1906.

in collaboration with Frenkel and Hirschberg. These statistics enabled me to state at once that every ataxic patient affected with inco-ordination of the lower or upper limbs, sufficiently patient to carry out a long and elaborate treatment, sufficiently intelligent to understand the rationale of this treatment, and also capable of the indispensable mental effort to learn and to repeat properly the movements which are its foundation, should have attained a result so considerable that in two to four months his social status is notably changed.

At the same time I sought in collaboration with Frenkel, to explain the genesis of the motor troubles of ataxics. We came to the conclusion that their attitude and their abnormal movements were due to three factors :—

1. The disturbances of the muscular sense, through which the patient loses the sense of attitude, and is hindered from controlling at all times the position and the movements of his limbs or of his body.

2. Muscular atony. In the normal state the muscular tone, by maintaining as it does a certain degree of contractility and elasticity of itself, keeps the limbs in certain attitudes which they cannot go beyond. In the tabetic the muscle which has been stretched does not return of its own accord to its former length, it is in a stade of permanent relaxation, and offers no longer any opposition to attitudes which would be impossible in the normal condition. Thus, with a normal subject lying on the back, a lower limb raised above the plane of the bed (the other limb remaining in contact with the bed) makes, with the axis of the trunk, an obtuse angle. With certain neuropathic women, with infants, with professional acrobats, this angle can be exceeded. With tabebics the limb can, without any effort, be placed at a right angle, or at an angle, even more and more acute until the leg is able to touch the face. This is a typical example

of what muscular atony and loss of muscular sense may produce. From these two causes the muscular contractions become abrupt and so irregular in force, that they miss their aim and produce the jerking movement of ataxia.

3. Inco-ordination. This is a complex phenomena resulting in great part, as Frenkel and I have thought, from the loss of muscular sense and of the muscular atony, but in part also of compensatory movements which the ataxic himself makes in trying to carry out the normal movements (Pierret), and further in part also to the supervention of attention, of intelligence, and of memory (zone corticale, Jendrassik, Raymond, Grasset) in the carryin out of movements which in the normal state are automatically performed. The co-ordination and the inco-ordination are not, therefore, entirely cerebral, neither are they solely sensory and muscular.

These considerations give us an idea of the meaning of the facts brought forward by Frenkel, and teach us to look for their explanation in a re-education of the muscular sense. This re-education the ataxic unconsciously begins himself when he seeks to make up for his incapacity by ill-directed movements. Our part is to guide and help him along this path by teaching him exercises which help him to carry out again his lost movements, wholly or in part, in the shortest time and with the least labour.

It is with this view that I have endeavoured since that time to devise a code of movements which, while corresponding with all the anomalies which are to be met with in the ataxic, permit him to regain, as quickly and surely as possible, his equilibrium, walking, and all the motor functions of the limbs, the head, and the body.

In making these investigations I have first of all noted several facts which, in addition to those already given by Frenkel, increase their range. Here are the two most important of these facts : —

1. It is not only the incoordinate movements of the arms and legs which can be corrected in the ataxic by appropriate exercises, but also (and this appears difficult to understand) the disturbances of respiration, of micturition, and of defæcation, the laryngeal crises,the defects of sensation,the sense of equilibrium and of position. In fact, respiration is accomplished by the action of muscles of the neck, chest, and abdomen, which while capable of acting without the control of the will can nevertheless become subordinate to it, and can modify according to its dictates the rhythm and the amplitude of their movements. A special education will then allow the ataxic who has lost the habit of breathing normally, and who is for this reason exposed to anæmia, troubles of nutrition, bronchial infections (and even to fatal disturbances of the broncho-pulmonary circulation), to regain a more normal type of respiration and also to modify his life and improve the prognosis of is disease. The troubles of micturition in tabes are due in great measure to inco-ordination of the diaphragm, the abdominal walls, and of the perineal floor, to arhythmia of the sphincters, all things which special education of movements of these muscles can in great measure correct. Again, the child learns by education of the sensori-motor tracts to control micturition, to make it voluntary when it was not so, to accomplish it when the need is nos felt, and reciprocally not accomplish it whem the need is feelf, all things which are not innate and natural. Similarly is it with defæcation. The laryngeal crises are due for the most part to the inco-ordination of the muscles of respiration and to the defects of laryngeal sensation, and it is possible to re-educate those muscles and their sensibility, for the re-education of sensibility is possible just as much as the re-education of motility, and for the same reasons. The newborn infant does not clearly perceive muscular sensations, he has not the exact sensation of attitudes, the notion of degree of displacement in space, all things which

education teaches him. With the tabetics sensory education is naturally rendered difficult by the presence of lesions of the sensory tracts. It is necessary to take into account the relative integrity of the pure motor tracts, because this makes it easier to understang how re-education of movement is effected. Further, the re-education of muscular sense and of the sense of position cannot attain the regularity and certainty of motor education, but still it is possible to a certain degree. As to the sense of equilibrium, it is simply the resultant of the education in movement of the limbs and body, of the muscular sense, and of the sense of position.

These conclusions are of very great importance in the prognosis of tabes. In fact, the tabetic does not die, so to speak, of his disease ; he dies of the complications produced by it. Sometimes he becomes a morphinomaniac from excess of pains, or abuses some other analgesic which ruins his constitution; sometimes insufficiency of micturition brings vesical stasis and urinary infection; obstinate constipation brings digestive troubles and stercoral auto-intoxication; laryngeal crises may themselves be fatal ; in fact, we have seen many times tabetics die of broncho-pulmonary infection (tubercular or otherwise) due to imperfect respiration, and which thoracic exercises, well carried out, would certainly have prevented. To sum up, if one succeeds (and that is possible with exercises and special care) in keeping respirations, defæcation and micturition in a normal condition, the health of the tabetic may be prolonged almost indefinitely, so to speak, whilst formerly cachexia, infection, death were the ordinary termination of these thoracic and abdominal complications, almost inevitably fatal in the history of tabes.

The second conclusion which we have been able to reach in the course of these ten years of research is this :—

To teach an ataxic to walk again numerous proceedings are at our disposal. There exist, in fact, many types of gait, but

they are not all equally simple, equally logical, equally easy. It is certain that in the beginning of re-education it was thought advisable (and Frenkel himself does not escape this criticism, at least up to 1900) to re-establish the equilibrium and walking in the tabetic by a process at the same time too simple and too severe, and too evidently inspired either by a sort of conception of an ideal walk or by the imitation of the military march. Now these two models are both defective, they lead to exercises which are exasperating, too complicated and useless. I have succeeded in combining in one system the re-education in walking with that of equilibrium and maintenance of movements of the trunk, and the walk that I teach is effected in such a manner that whilst insuring the maximum of stability with the minimum of effort it serves at the same time and with slight modifications for walking up or down-hill, on the level, or on irregular ground, all points which the ideal walk and the military march fail to accomplish. From which results a very great economy in the efforts of the patient and the teacher, which is appreciable if one thinks that precisely the principal obstacle to re-education of a tabetic is the difficulty of the exercises and the length of the treatment.

So then, taking as our point of departure the work done in collaboration with Frenkel ten years ago, and in making divers important additions and modifications, I have fixed on a method for the compensatory treatment of the ataxia of tabetics, taking into consideration not only the motor disturbances of the arms and the legs, but also the inco-ordination of the trunk, the defects of sensibility, the insufficiency of inspiration, of micturition and defæcation, the difficulties in equilibration, and the sense of position and completely modifying the health and duration of the life of the tabetic, the prognosis and the evolution of tabes. We shall study in a future paper to what extent each of these disturbances can be ameliorated (for they are capable of relief to a very

variable extent), the time necessary to obtain the greatest improvement, which points may be considered as settled as the result of my six years of assiduous practice and the divers statistics which I have published, what still remains to be investigated, and finally what is the complete method and what are the principal technical processes which are employed.

THE TREATMENT OF TABES DORSALIS AND ITS PROGNOSIS (1)

It is an erroneous idea to consider tabes as a disease amenable to one method of treatment, that is to say, by drugs. Whether the drug be nitrate of silver, which was formerly employed, or mercury, which is employed nowadays, the idea remains the same and the object is to cure the patient by means of a drug. A nervous disease is not an equation in which te observer may set one poison as equally opposable to another poison. The evolution of tabes bears a definite relation to various infections and intoxications. The patient is always a complex problem and the physician must in every case take into consideration such causes as syphilis, overwork, alcoholism, tobacco poisoning, influenza, tuberculosis, and the like. On account of the predominant part played by syphilys in the pathogeny of tabes it is indisputable that antisyphilitic treatment ougth always to be tried, att all events at the beginning of the attack, and especially if the tabetic patient have not previously undergone antisyphilitic treatment, but this treatment should not be kept up as a routine and particularly when it is observed to give bad results. Certain cases of syphilitic tabes which are vigorously treated with mercurials given in increasing doses from the beginning of their rapid evolution are often much improved and furnish the greater part of the cures (Lemoine, Leredde), but the systematic giving of mercury or of iodides in big doses in those patients in whom tabetic

(1) Published by «The Lancet», 18th June 1904.

lesions are already well marked, whose general health is broken down, and who are suffering from auto-infections arising from the gastro-intestinal tract, the bladder, or the lungs, does nothing except increase the number of poisons in an organism which is already overcharged with them, and as a consequence aggravates the nervous disorders which are the consequences of those poisons.

It is indisputable (1) that no tabetic gets well solely on account of the quantity of iodide or of mercury which he absorbs, and (2) that aggravation of the disease is more frequent among tabetics who are put on an antisyphilitic treatment in increasing doses than among those who are not treated in this way. It is necessary to avoid attributing exclusively tho the action of heroic remedies such as mercury the relaxations and the diminutions in the symptoms of disease which are sometimes observed in the majority of cases of tabes, for such ameliorations are the rule, and it is incorrect to say that locomotor ataxy must be a disease which is necessarily and invariably progressive (Brissaud, Joffroy, Raymond, Marie, Ballet, and others). The disease is steadily progressive in a third of the cases. It is arrested, improved, or gets well in about a fourth of the cases and in the remainder it proceeds very slowly with periods of quiescence only affecting the life of the patient seriously on occasions, and during the rest of his life offering him the possibility of living a life the activity of which doubtless must be diminished, but which is by no means very uncomfortable and is markedly different from the average life which used to be supposed to be the only one in view for a tabetic; and this life may go on for a long time, for by statistics collected at Berlin, La Malou, and Bîcêtre it appears that the duration of life of a tabetic is very nearly the same as that of a normal patient (Leyden, Faure, and P. Marie).

Why, then, are the present prognosis and that formerly held so different? For many reasons. First, it is obvious

that in the present day nearly all medical men know how to diagnose tabes in its very early stages, whereas in former years the diagnosis was only very rarely made. As the patient is made the sooner aware of his malady by so much is be the sooner treated. Secondly, the very general employment of the treatment by mercurials and iodides of syphilitic patients is probably a reason for the diminution in the evolution of tabes which may be called the daughter or niece of syphilis (Babinski, Leredde). And thirdly, because a tabetic patient nowadays is treated as a tuberculous patient and so many other patients suffering from chronic diseases, so that he does not sit down with his hands folded and resign himsef without a struggle to the fatal sentence which used to be pronounced againts him as soon as the diagnosis of tabes was given. The tabetic takes care of himself, that is to say, just as a tuberculous patient does, he modifies his mode of life, he gives up certain periods to treatment, he regulates his affairs and no longer carries on his work as a normal man but as an invalid — in short, he makes terms with his enemy and sacrifices a little to gain much (*il fait la part du feu*). He lays down a special regimen for himself and so is enabled to economise his life, so to speak, and o make the smallest demands possible upon his vitality. The physician who undertakes the care of a tabetic patient should map out his code of directions so as to attain the mean between two extremes. (1) He must not allow the patient to think that there will be a complete and radical cure within a few months or that there is any specific remedy for his disease; but (2) he must not allow his patient to abandon himself to his lot as one without hope or to think that his disease is inevitably tending towards death, for such is not the case. The physician should further inform the patient that the disease from which he is suffering will in all probability not get any less during his life, that it will diminish his capacity for

work, and will be the cause of suffering and of discomfort, but that on the other hand the watchful care of the medical attendant and the willing coöperation of the patient will to a great extent avoid the occurrence of possible complication. Finally, he must tell him that tabetic patients have been known to get quite well.

As a matter of fact, the arrest with the persistence of the abolition of the patellar reflex or of Argyll Robertson's sign, or of any other symptom without importance has the same value for the patient as a cure. Besides this the medical man must attend carefully to the state of the patient's bladder and see that it is washed out; he must prevent the accumulation of fæcal matter in the intestines which so commonly occurs in tabes; he must keep a watchful eye upon is patient's nourishment and sleep and see that he is not underfed and that he does not suffer from insomnia; he will order him to live as much as possible in the open air and will protect him from overwork, either mental or physical; and finally he will watch with care the condition of the circulatory system. By doing this the physician will be in the way to combat most of the causes of death which supervene in tabes. Moreover, while this long watch is being kept the physician must remember to order such drugs as may be suggested by circumstances.

The physician should besides impress upon his patient the necessity for taking an annual "cure" of one or more months' duration during wich the patient residing in a sanatorium should devote himself entirely to the task of repairing the damage already caused by the disease and ol putting himself into a condition to resist the attacks of complications which may be expected to occur. During this therapeutic retreat the patient should by means of special exercises learn how to train his respiratory system, as it is owing to defects in this that a tabetic patient suffers from respiratory crises, such as attacks of suffocation, of broncho-

pulmonary infection, or of hæmoptysis. He must also train his excretory system so far as regards urination and defecation. He will also find that he will greatly improve and possibly will recover altogheter his powers of voluntary movement over which he may have completely lost control. During the period of retreat he may also submit himself to a special hygienic course of thermal hydrotherapy, and finally must employ all the methods which experience has already shown to be useful in cases of tabes.

But the continuity of the treatment must be maintained not for a day, or a week, or a month, but throughout the years. After years of strict care and of watchful medical surveillance the tabetic patient will find himself a changed man. Even though he do not recover the integrity of all his functions yet he may at least make sure of the prolongation of his life, of being able to do some kind of work, and to have health and strength sufficient to enable him to lead a usefuld and interesting life. It is by following these directions that the physician will find himself in a position to give in a case of tabes a prognosis which, if not absolutely good, is yet quite bearable in the majority of cases.

TREATMENT OF SPASMODIC PARAPLEGIAS BY A NEW TECHNICAL APPLICATION OF METHODICAL EXERCISES (1)

The condition of spasmodic paraplegia has certainly benefited very little from the treatments known. In a few cases (notably the syphilitics) therapeutics directed againts the real cause of the disease (compression, spinal irritation meningeal injury) may, assuredly, be sufficient to remove the spasmodic accidents more or less completely. But, in the majority of cases treatments directed against the probable causes of paraplagia (theumatism, various infections or intoxications, etc.) have no effect, and the paraplegia, after making insidious progress, in a few months, or auddently, in a few days, remains indefinitely stationary.

We now place before the results of the cases we have undertaken to treat during the last four years (namely since 1902).

§ I

The term «spasmodic paraplegia» is used here in its clinical and classical sense ; i. c. it applics to patients afflicted with permanent contractures of the lower limbs, with trouble or with suppression of voluntary movuments by lesion or irritation of the spinal and motor centres, whatever may be the cause of this injury or irritation. Very often, the general condition of the patient remained good.

(1) 8th French Congress of Medicin — Liege September 1906.

There was no emaciation and no other diminution of strength than that resulting from the paralysis itself; in the afflicted limbs there was little or no atrophy ; often, the bulk of the muscles remained normal. These, then, were cases of true (and so to say) classical spasmodic paraplegia without complications, which we undertook to cure. The symptoms were of the clearest, the spasmodic condition accentuated and paralysis extended to all or nearly all the muscles of the lower limbs.

All our patients were in a stationary condition, that is to say, for a long time (several months or several years), the state of spasmodic paraplegia existed with inconsiderable modification. Therefore, it can be seen that the lesion which had engendered the paraplegia was no longer in a phase of acute evolution or even had arrived at the cicatricial period. We reffrained from interfaring with the patients having a lesion in evident and progressive evolution, especially when movements excited pains or contractures (as in pot tic paraplegias, for instance). These reservations made, and our field of action being thus clearly and precisely limited, we have obtained results which we think deserve to be known.

§ II. — Technical method

The method we determined upon includes :

1° Firstly, a period of passive exercise during which the doctor moves the contractured limbs, sometimes with a great deal of energy, always with much prudence, time and patience. Thus, we conquer the most savere and longstanding contractures in a few months (or weeks) of daily exercises.

2° Thus, whan the paraplegic is rendered supple (that is to say, when it is possible for the lower limbs to execute all the articular movements that the spasmodic stiffness

prevented), the second period, very different from the first, commences. Then, there are voluntary exercises to be performed by the patient, with help or resistance given by physician, proportionately to the paralytic or paretic condition of each group of muscles. The purpose is to teach the paralytic to use muscles which he had lost the habit of using, to regulate the energy of the voluntary contractions in the directors and opposing muscles used in the movement.

3° When the elementary movements are sufficiently restored, than commences the study of complex and coordinate movements of active life, the object being to recover the power of standing upright, walking, running, etc.

Forty of our patients were submitted to a methodical treatment sufficiently protracted to allow us to appreciate the results. The treatments were resumed several times, each cure lasting from one to three months, that in to say an average of forty-five days. The patients were exercised once or twice a day. We allowed more or less time between the renewals (one or more months) according to the clinical spacies and suitability of each. The number of resumptions varied with the intensity and tenacity of the symptoms and also with the good will and the sprength of the patients. In the longest of our treatments, the series of renewals extends over a period of four years; but for the mont part, the period does not exceed a year. It is no possible to give here sufficient tecnical details to show the great differ in each case. The strength and patience of the invalid vary too; lesions of long standing sometimes induce wrong attitudes or habits, of which the patient will not break kimself, etc.: In short, if the general lines of treatment are the same for all cases, the differences of application are nearly as great as the number of clinical species. However, periods of exercises, lasting from three weeks to three months, separated by a few months of rest, must he considered as giving better results than long

uninterrupted treatments of six, eight, or ten months, which weary the attention and exhaust the patience and resources of the invalids. The results obtained at each renewal of the treatment remain acquired provided that the patient does not fall into complete idleness after the cure, or that he does not resume the habit of wrong attitudes or make badly combined movements; and, lastly, that the duration of the alternate treatment and rest suitable to each case be carefully observed.

§ III. — Results

Before treatment. — 15 of our patients were cripples (or nearly so). — 17 could drag themselves along, slowly, with assistance and great difficulty; — 8 could move about with relative liberty but with a gait clearly spasmodic. — Total: 40.

At the end of the treatment. — 2 patients are still crippled, but their contractures are reduced, the power of making voluntary movements improved, permitting them to move about, the one with two crutches, the other with a stick. Both, moreover, were unable to extend their treatment as long as was necessary, and it may be inferred (at least for one of them) that the results would have been subsequently improved; — 10 walk without assistance, but with difficulty, nevertheless, they have become independent and this improvement is sufficient to change their social life completely; — 13 can walk easily, but with a still spasmodic gait; — 7 show only slight signs of spasmodicity, more ungraceful than embarrassing; — 2 have recovered a normal walk and their spasmodic condition only appears when making difficult movements; — 2 can run, jump, dance, and accomplish all that a normal man can do.

Four patients abandoned the treatment, at the beginning, discouraged by the prospect of the length and difficulty of it. This less (10 o/o) is usual in the therapeutical methode we apply. In fact, the good will and competency of the physician are not sufficient, the invalid, also, must have patience, intelligence, and application.

Now, the patients we are treating are suffering from nervous injurice; a great many are, consequently, nevropathic, in whom the nervous system is a «locus mineros resistantiae». Being nevropathic, they often have more instability and have not sufficient application and capacity for the continuity of prospects, necessary for the succees of a lengthy and difficult treatment.

It is not yet possible to say whether these important results can be considered as difinitive. The oldest of our cases was from two to four years. However, in principle, the results obtained from this treatment of spasmodic paraplegias seem to us of sufficient duration and stability. We recollect, on this occasion, that we consider, after ten years, expairience, the results obtenaid in the reeducation of tabetics, almost definitively durable and more satisfactory in many respects.

But, it happens, occasionnally, that the disease in itself is progressive and that other symptoms appear after the improvement in the paraplegia. In that case, the improvement is seen maintained without relapse, and the new symptoms in juxtaposition with the first ones. We shall speak of this again in subsequent works. Purposely, we speak here only of motor disturbances in walking, standing, etc., that is to say of movements in relation with life. To these only, our technical method applics, the results of which we publish. But these exists also, among spasmodic paraplegias, disturbances of respiration, digestion, miction and defecation. The mechanism of these disturbances needs special study, the technical method of treatment is different

from that we have just explained, and the results of it are not so good. We have reserved this study, also, for other publications, in which we shall examine, as a whole, disturbances of the functions of nutrition life (respiration, digestion, miction and defecation) and the mechanical treatment thereof among paralytics, ataxics spasmodics, etc.

§ IV

The patients we observed were generally middle-aged, the youngest was twenty eight, the oldest sixty-seven years of age. A relatively young age is, of course, a better condition of success. However, a more advanced age is not an obstacle. All being at present living, we cannot give anatomo-pathological diagnosics with absolute certainty. However, our patients were all seen by several physicians, and generally by competent neurologists. The following are the diagnosics which were put in common agreement: 13 had become spasmodic paraplegics after transverse myelitis (among whom were three syphilitics); — 2 after hematomyelia; — 7 after vascularitia, with sclerosis disseminated in the cerebro-spinal axis (among whom were four syphilitics). The seven syphilitic patients had been submitted to the mercurial treatment with success; but the methodical exercises have only been performed to the period when, the mercurial treatment having fulfilled its' purpose, the paralytic state appear finally established. — 3 patients were suffering from Friedreich's disease and 2 from Parkinson's disease (it is the Friedreich's and Parkinson's which have given the most mediocre results). Lastly, 3 patients had, for many years, permanent and painful contractures of the lower limbs (notably the adductors) after arthritis of hips and knees; — 2 patients had a spasmodic and acute state of neurotic and toxic origin. As might be

expected, we obtained good results in this group of neuropathics. It is not actually possible, to make certain reports between the degree of improvements and the nature and seniority of the injuries. On the other hand, the general hygiene, the «modus vivendi» during the cure, effectually cooperate in the success.

§ V

We mentioned, at the 12th French Congress of Neurology (Brussels, 1th of August 1903), the possibility of obtaining the results just read. Since that time, our opinion has been strenghtened and developed by the study of numerous cases, and by the improvement of the technical method employed. Whithout giving the satisfaction of a perfect and certain cure, these therapeutical processes (bringing to an invalid, often a burden to himself and his family, the possibility of taking up active employement and leading again an independent life), assuredly render great service. Yet, patients suffering from these diseases, being generally given up to their unhappy fate, almost without therapeutics, one must not be too exacting. Let us not forget that the question is of patients who are generally considered as incurable, and for whom, consequently, each progressive improvement is worthy of retaining the attention. Be sides, there are some cases from which it is possible to obtain quite remarkable results, almont approaching a complete cure.

Relating to the treatment of tabetics by an analogous method, successes are known and the cause was judged and won some years ago. The new technical method of which we speak here permits to us to wich it may soon be the same for spasmodic paraplegics. We have not found analogous facts in the medical literature. Indeed, we cannot establich a similatary between the complex method of which

we have just indicated the chief out-lines, and the passive mobility applied by the code of sweedish medical gymnastic to contractures and peri-articular retractions. The name of «Frenkel's method» cannot be extended to our technical method, although this designation has already been used excessively. Yet, Frenkel said : «In cases of myelitis, sclerosis with patchen, and spasmodic paraplegias, where I tried to employ my method, the effect has not only been negative, but I have even often ascertained an aggravation in the condition of the patients, under the influence of fruitless efforts (*Semaine médicale*, 25th of March 1896 : «On the cerebral exercise applied to the treatment of certain motor disturbances»). — Finally, on the so heterogeneous various works published during the last few years, under the name of Reeducation, the most part of which are only the repetition of massage, exercises or medical gymnastic already known (and which scarcely deserve, in consequence, a new name). I have seen nothing comparable with the facts I have just given. I have not been able the procure the article by Mazzone (La psico-gimnastica nella terapia di alcune malattia dell' asse cerebro-spinale. — Annali di nevrologia 1898, fasc. IV-V, p. 287-328), which treats of a few applications derived from Frenkel's method, amongst, which a case with hemiparesis and paraplegia, and, consequently, unlike from those I have mentioned, which are cases of typical spasmodic paraplegia, improved by a nex technical method.

DU MÊME AUTEUR

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